FIDELITY EXPLORATION AND PRODUCTION COMPANY
COAL CREEK - CBNG WELL DRILLING APPLICATIONS

Fidelity Exploration and Production Company
2585 Heartland Drive
Sheridan, WY 82801

State of Montana Oil and Gas Lease OG-31307-94
Township 9 South, Range 41 East, Section 16 (All)
Big Horn County, Montana

Fidelity Exploration and Production Company (Fidelity) has proposed an amended plan of development (POD) for the Coal Creek Area, which is located within an approved expansion area of the CX Field. The Amended POD includes one 640 acre state section in Township 9 South, Range 41 East, Section 16. This amended POD consists of the drilling and completion of 236 additional coal bed natural gas (CBNG) wells (173 Fed, 43 fee, 20 state). There are 16 existing CBNG wells on the state section that were drilled and completed as part of the original Coal Creek POD.

The wells will be drilled on regulatory spacing of two wells per 160 acres per coal seam. The 20 wells proposed on the state tract will be co-located on four pad sites in order to develop and produce from the four specific coal zones.

Power, water and gas flowlines would be underground and routed along a single corridor. Gas production is routed to compressor/manifold stations adjacent to state land. Water management for the twenty state wells would utilize authorized discharge to the Tongue River pursuant to existing MPDES permits.

The Montana Board of Oil and Gas Conservation (MBOGC) has approved the Coal Creek Amended POD and issued a Finding of No Significant Impact on March 1, 2006. The fee wells in the POD area will be developed regardless of whether additional development occurs on the state common schools tract.

The draft Environmental Assessment was released for public comment on June 8, 2006, with comments requested by July 7, 2006. As of July 7, 2006, one comment was received expressing support of the project. The final EA with a draft record of decision is attached for your review.

The director requests Land Board consideration and, as appropriate, authorization to approve the Coal Creek amended plan of development relative to activities proposed for the state section 16, Township 9 South, Range 41 East.

STATE OF MONTANA

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

TRUST LAND MANAGEMENT DIVISION

ENVIRONMENTAL ASSESSMENT
TONGUE RIVER – COAL CREEK INFILL DRILLING PROJECT

Township 9 South, Range 41 East, Section 16: ALL [Common Schools]
Big Horn County, Montana

FINAL

July 7, 2006

TRUST LAND MANAGEMENT DIVISION
DECISION RECORD
AND
FINDING OF NO SIGNIFICANT IMPACT

Fidelity Exploration and Production Company
Coal Creek Amended CBNG Project Plan of Development

Proposal:
Fidelity Exploration and Production Company (Fidelity) has proposed an amended plan of development (POD) for the Coal Creek project area, which is located within an approved expansion area of CX field. The original plan of development included the drilling and completion of 217 coal bed natural gas wells (139 federal, 62 fee, 16 state) with one well drilled per coal bed per 160 acres. A joint environmental assessment was completed by the Bureau of Land Management, Montana Board of Oil and Gas Conservation, and the Montana Department of Environmental Quality. The MBOGC issued a Finding of No Significant Impact (FONSI) on January 19, 2005 and MBOGC released their FONSI on February 1, 2005. The Trust Land Management Division (TLMD) prepared an environmental assessment that tiered from the joint document prepared by the BLM, MBOGC, and MDEQ for the 16 state wells in the project and the State Board of Land Commissioners (Land Board) approved the project on April 18, 2005. All of the state wells in the project have been drilled and are producing.

This amended project proposal involves drilling and completion of an additional 236 wells (173 federal, 43 fee, and 20 state) within the original project boundary, effectively increasing the well density in the project to two wells per coal seam per 160 acres. The MBOGC completed an EA for the 43 fee wells and 20 state wells in the amended POD and issued a FONSI on March 1, 2006. The permits to drill for the 43 fee and 20 state wells have been issued.

Decision:
The Trust Land Management Division is under the regulatory authority of the Montana Board of Oil and Gas for oil and gas operations in Montana. TLMD is also under the regulatory authority of MDEQ for air quality, water quality, and water discharge. The operator must abide by the rules and regulations imposed by the regulatory agencies.

Implementation of Alternative B will entail the following actions:

- A total of 20 coal bed natural gas wells would be drilled on four separate pad locations in the state section, with five wells per pad site. Each well would be drilled to a different coal seam within the Fort Union Formation. Approximately ½ acre of land would be disturbed for each five-well pad. There would be less than 2 acres of land disturbance total for all four well pads.
- Underground power lines would be placed from three separate power drops to the well pads.
- Two track trails would be utilized to access the four well pads in the state section. There is an existing all weather road leading from the Otter Road (county road)

south through state section to the Rancholme 21 battery in Section 21 covered under a land use license.

- Four inch underground water lines would be run from well pads on the state tract to an authorized untreated water discharge outfall (outfall 15) under MPDES permit MT0030457 or to a treatment facility and then discharged into the Tongue River at outfall 16 under MPDES permit MT0030724. Initially, approximately 120 gallons per minute would be produced and potentially discharged from the state coal bed natural gas wells. Each individual well would have a polyethylene flowline installed below grade from the wellhead to transport gas to the Rancholme 21 battery on Section 21. The corridors for the water lines and the gas lines would be identical. Additional beneficial uses include irrigation, transport of water to the Spring Creek and Decker Coal Mines, dust control, and stock water use.
- Fidelity would continue to monitor each discharge point on the Tongue River and file reports in accordance with their existing MPDES permits.

The Trust Land Management Division portion of this POD is a small fraction of the entire project area. The state has 640 acres with 20 wells out of a total of 236 wells in the amended POD area. This is consistent with development patterns in surrounding areas. Coal bed natural gas development is within the existing CX Field boundaries and will continue around the state tract. The Coal Bed Natural Gas Field Operating and Reclamation Requirements were established to mitigate any impacts that may occur as a result of the development on state lands and will be incorporated into the project approval.

Finding of No Significant Impact

Based upon a review of the Environmental Analysis done jointly by the Bureau of Land Management, Montana Board of Oil and Gas Conservation, and the Montana Department of Environmental Quality and the state specific EA for the original POD area in conjunction with the Environmental Analysis done by MBOGC for the amended POD and the state EA for the amended POD, I find that approval of the proposed action does not constitute a major state action significantly affecting the quality of the human environment, and does not require the preparation of an environmental impact statement.

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Monte G. Mason
Chief, Minerals Management Bureau
July 17, 2006

CHAPTER 1:
PURPOSE AND NEED FOR ACTION

1.1 Proposed Action

Fidelity Exploration and Production Company (Fidelity) has proposed an amended plan of development (POD) for the Tongue River- Coal Creek Area, which is in an approved expansion area of CX field (approved by Montana Board of Oil and Gas Conservation on February 12, 2004). The original plan of development included the drilling of 217 Coal Bed Natural Gas (CBNG) wells (139 federal, 16 state, and 62 fee) with one well per coal bed per 160 acres within the CX Field. The Bureau of Land Management (BLM), the Montana Board of Oil and Gas Conservation (BOGC), and the Montana Department of Environmental Quality (MDEQ) completed a joint environmental assessment on the original project proposal which covered proposed activity on federal, fee, and state lands. The BLM issued a Finding of No Significant Impact (FONSI) on January 19, 2005 and MBOGC released their FONSI on February 1, 2005. The Trust Land Management Division (TLMD) prepared an environmental assessment that tiered from the joint document prepared by the BLM, BOGC, and MDEQ for the 16 state wells in the project and the State Board of Land Commissioners (Land Board) approved the project on April 18, 2005.

This amended project proposal involves the drilling and completion of an additional 236 wells (173 federal, 20 state, 43 fee) within the original project boundary, effectively increasing the well density in the project to two wells per coal bed per 160 acres. The MBOGC completed an EA for the 20 state wells and the 43 fee wells in the amended POD and issued a FONSI on March 1, 2006. The permits to drill for the state and fee wells have been issued.

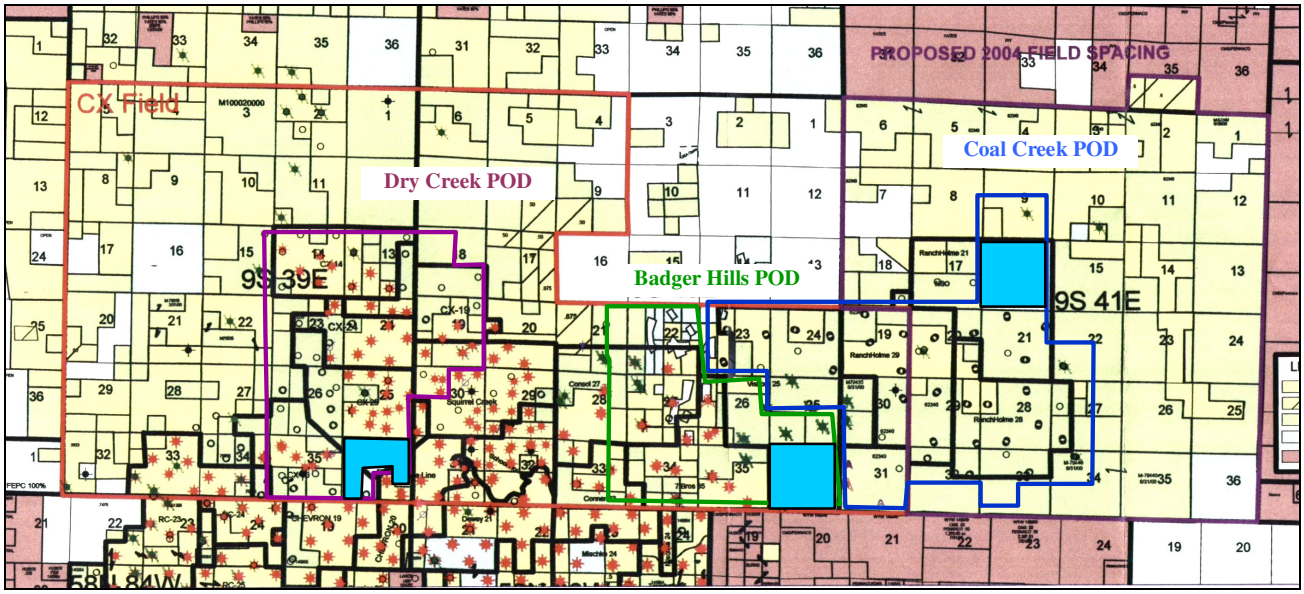

Figure 1: Coal Creek Amended POD area relative to the other approved PODs

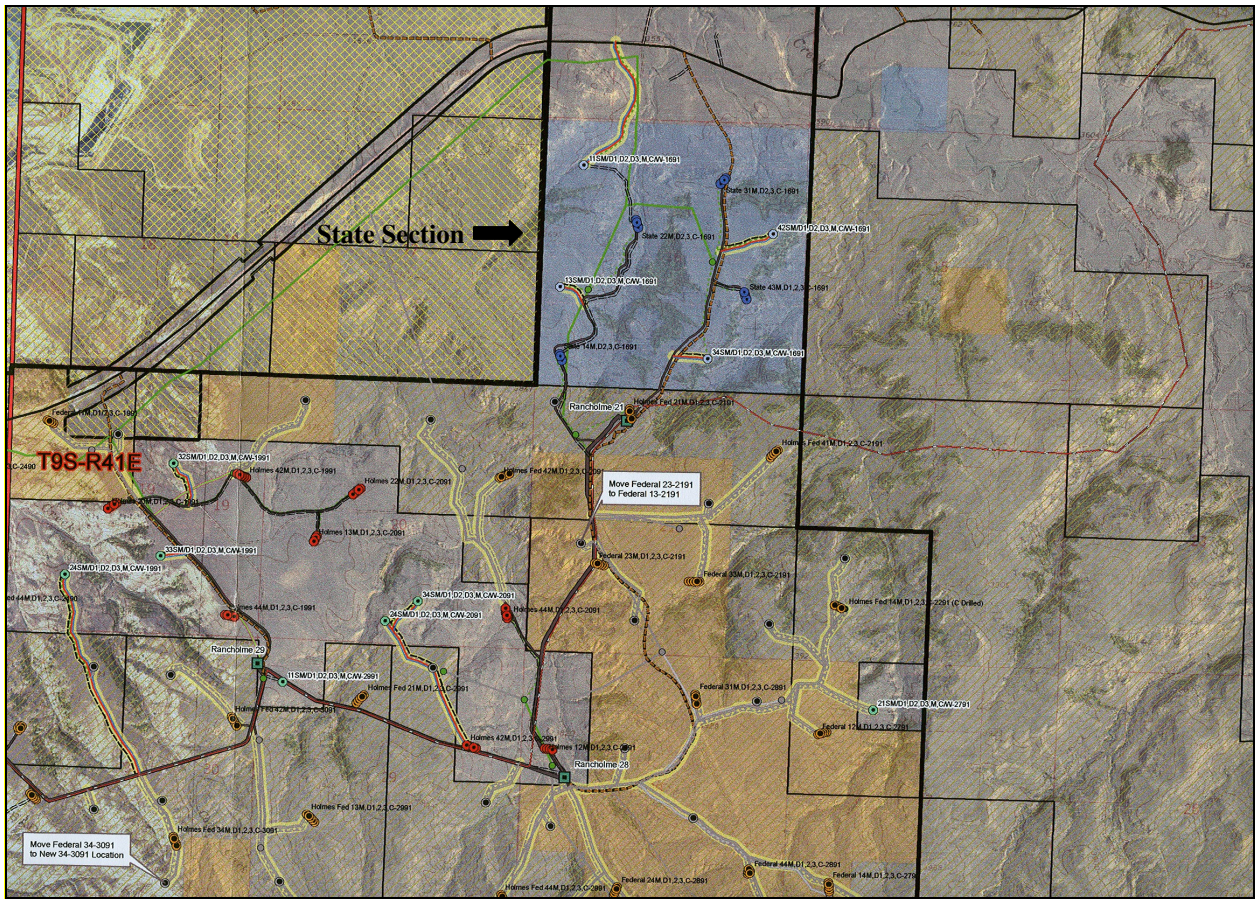

Figure 2: Fidelity's Tongue River-Coal Creek Amended POD Area

This environmental assessment focuses on the 20 proposed wells on state-owned land. It incorporates by reference and tiers off of the Joint EA done for the original project area, the EA completed by TLMD for the state wells in the original project area, and the EA completed by MBOGC for the state and fee wells under this amended plan of development. The pertinent documents that are incorporated by reference and utilized in this analysis are as follows:

- Montana Statewide Final Oil and Gas EIS and Amendment of the Powder River and Billings RMP (MT FEIS) approved April 30, 2003;
- The Coal Creek Plan of Development, accepted by Montana Board of Oil and Gas Conservation on February 12, 2004;
- The CX Field Expansion approved on February 12, 2004.
- The Fidelity Coal Creek Environmental Assessment, which is a joint assessment by Bureau of Land Management, Montana Department of Environmental Quality, and Montana Board of Oil and Gas Commission (Joint EA). BLM FONSI issued January 19, 2005 and MBOGC FONSI issued February 1, 2005.
- The Coal Creek Environmental Assessment completed by TLMD and approved by the Land Board on April 18, 2005.
- The Coal Creek (Amended) Plan of Development, accepted by Montana Board of Oil and Gas Conservation in November 2005.

- The Coal Creek (Amended) Environmental Assessment completed by MBOGC. The FONSI was issued on March 1, 2006.

1.2 Need for the Action

Fidelity holds valid federal, state, and private oil and gas leases in the Coal Creek Project Area. Fidelity submitted applications to drill coal bed natural gas wells on state land to the Montana Board of Oil and Gas Conservation and to the Department of Natural Resources and Conservation, Trust Land Management Division (TLMD) on April 19, 2006. Oil and Gas leases issued by the State of Montana require the lessee to submit proposed activities on the state lease to the department for review. The Montana Environmental Policy Act (MEPA) requires that an environmental review be completed if the action has a potential for impacting the human environment.

The Montana Department of Natural Resources and Conservation, Trust Land Management Division manages state-owned trust lands under the direction of the Land Board. Both the Land Board and the Department have the fiduciary duty to manage and utilize these lands to generate revenue for the trust beneficiaries, which are the schools throughout the State of Montana. It is TLMD's responsibility to consider environmental impacts and to protect the future income generating capacity of the lands.

Coal bed natural gas production is relatively new to Montana. Since the first wells were drilled on state lands and began producing in 2003, total revenue has reached approximately $2,806,703 for the school trust fund with current revenue of exceeding $145,000 per month.

1.3 Relevant Plans, EISs, EAs, Regulations, and Other Documents

1.3.1 Montana MT Final Oil and Gas EIS and Amendment of the Powder River and Billings Resource Management Plans (MT FEIS) approved April 30, 2003.

1.3.2 The Fidelity Exploration and Production Company CX Field Expansion Proposal, approved by the Montana Board of Oil and Gas Conservation on February 12, 2004.

1.3.3 The Fidelity Exploration and Production Company Coal Creek Plan of Development accepted by the Montana Board of Oil and Gas Conservation on February 12, 2004.

1.3.4 The Tongue River Coal Creek Plan of Development Joint Environmental Assessment by the Bureau of Land Management, Montana Board of Oil and Gas Conservation, and the Montana Department of Environmental Quality. BLM FONSI issued on, 2005 and MBOGC FONSI issued February 1, 2005.

1.3.5 The Coal Creek Environmental Assessment completed by TLMD and approved by the Land Board on April 18, 2005.

1.3.6 The Coal Creek (Amended) Plan of Development, accepted by Montana Board of Oil and Gas Conservation in November 2005.

1.3.7 The Coal Creek (Amended) Environmental Assessment completed by MBOGC. The FONSI was issued on March 1, 2006.

1.4 Objectives of the Action

1.4.1 **Objective #1**: Develop a coal bed natural gas project in southeastern Montana encompassing federal, fee, and state surfaces and minerals.

1.4.2 **Objective #2**: Operate state and fee wells in conjunction with adjacent/nearby federal and fee lease wells, sharing facilities constructed and operating on the leases.

1.4.3 **Objective #3**: Increase the revenue generated for the State of Montana school trust fund.

1.5 Decision(s) That Must Be Made

The Minerals Management Bureau Chief of the Trust Land Management Division of the Montana Department of Natural Resources and Conservation must review the CBNG Plan of Development for state lands (as briefly described in Section 1.1 and in detail in Section 2.2) and determine if the selected alternative (plan) would or would not be a major state action, significantly affecting the quality of the human environment. If the Bureau Chief determines that it would not significantly affect the quality of the human environment, then he could prepare and sign a ROD (Record of Decision) and the project could proceed, subject to approval by the Land Board. Otherwise, an EIS and a ROD must be prepared and signed before the Coal Creek Amended Project could proceed on state land.

1.6 Scope of This Environmental Analysis

1.6.1 Issues Studied in Detail

1.6.1.1 Air Quality (Issue #1)

Increased activity in the project area could result in increased air emissions from drilling equipment and increased travel to and from the well locations for the duration of the project.

1.6.1.2 Cultural Resources (Issue #2)

Land disturbance caused by constructing the well pads and the infrastructure that is necessary for completion of this project could have an impact on the cultural resources in the area.

1.6.1.3 Hydrology (Issue #3)

Coal bed natural gas production carries water from the coal seams during the initial production phases. Management of produced water currently utilizes direct discharge to the Tongue River at authorized discharge points under an existing MPDES permit, delivery by flowline to coal mines for dust suppression, storage and evaporation, and, to a lesser extent, delivery by flowline for stockwater.

1.6.1.4 Lands and Realty (Issue #4)

There is currently a State of Montana grazing lease that covers the entire state section. Increased coal bed natural gas development could decrease the AUMs that are currently set for this lease and could interrupt grazing patterns during the drilling and construction phases. There are currently two land use licenses held by Fidelity, one for an access road and one for a 12" water line. Powder River Energy Corporation also holds an easement for an overhead powerline that travels through the state section. Decker Coal Company holds an active coal lease on the state section.

1.6.1.5 Soils (Issue #5)

Construction of the well pads and infrastructure and the increased travel on the all weather road and existing and new two track trails on the state section could result in soil impacts and effect soil productivity depending on area and degree of physical effects. Erosion could also be a problem throughout the duration of this project.

1.6.1.6 Vegetation (Issue #6)

Construction of the well pads and infrastructure and the increased travel on the two track trails into the state section could result in the temporary removal of vegetation. Increased activity in the area also increases the potential of noxious weed introduction.

1.6.1.7 Wildlife (Issue #7)

Coal bed natural gas development could alter the habitat or create disturbance that could be detrimental to wildlife species.

1.6.1.8 Social and Economic (Issue #8)

Coal bed natural gas development could positively impact the revenue generated for the school trust fund.

1.6.2 Issues Eliminated From Further Study

1.6.2.1 Noise (Resource #1)

Coal bed natural gas development would increase the noise level in the project area during the initial drilling phase.

Rationale for Elimination: This project area lies within the existing CX Ranch field and a previously developed project area. Coal bed natural gas development is occurring throughout the entire field. There would be no compressor stations or batteries on state lands. The increased level of noise would only occur during the weeks that it would take to drill the wells.

1.6.2.2 Aesthetics (Resource #2)

Drilling and completing the twenty wells on state lands would require that an insulated fiberglass cover and a pump panel be placed on the surface to house the well casing, piping, valves, flow meters and pressure gauges.

Rationale for Elimination: This project area lies in an area of hills and valleys, making the long-range visibility of these well housings improbable. The state section proposed for increased development currently has infrastructure in place. In addition, the covers and panels are small (less than 4 feet tall) and would be painted in a manner to blend in with the landscaping whenever possible. There is no legal public access to this section, so public viewing of the wells would not occur.

1.6.2.3 Recreation (Resource #3)

A portion of this POD is crucial mule deer winter habitat. As a result, the recreation potential for fall hunting of big game is probable.

Rationale for Elimination: There is no public access to the state lands, which makes recreational use difficult.

1.7 Applicable Permits, Licenses, and Other Consultation Requirements

1.7.1 Treated Water Discharge Permit Approval from MDEQ

1.7.2 Air Quality Permits from MDEQ for drilling rig operations

CHAPTER 2:
ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 Introduction

The purpose of this chapter is to describe and compare the alternatives by summarizing the environmental consequences. There are two alternatives outlined in this chapter: the No Action Alternative (Alternative A) and the Proposed Action (Alternative B). Based on the descriptions of the relevant resources in Chapter 3: Affected Environment and the predicted effects of both alternatives in Chapter 4: Environmental Consequences, this chapter presents the predicted attainment of project objectives and the predicted effects of all alternatives on the quality of the human environment in comparative form, providing a basis for choice among the options for the decision maker and the public.

2.2 Description of Alternatives

2.2.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

2.2.1.1 Principal Actions of Alternative A

Additional coal bed natural gas on state land would not be developed. However, ongoing DNRC permitted and approved activities would continue in the project area:

- Livestock grazing: an existing surface lease for 126 AUMs (animal unit months) would continue on the project area.
- Vehicle access: all existing two track trails would continue to be utilized to access existing coal bed natural gas wells and facilities. Existing trails would continue to be used for other uses such as use by the surface lessee.
- Existing coal bed natural gas development: Selection of Alternative A would not prevent the existing sixteen wells on state land and related infrastructure from being produced and utilized.
- Land Use Licenses (LULs) would remain in effect. Fidelity holds a LUL for the all weather road running north-south through the state section and a LUL for a water line through the state section.
- Powder River Energy Corporation holds an easement for an overhead powerline running through the state section.
- Offset Development: Selection of Alternative A would not prevent additional coal bed natural gas development on offset lands.

2.2.1.2 Past Relevant Actions

The plan of development area is within the existing CX Field boundaries. There are currently 496 productive coal bed natural gas wells in the existing field and permits have been issued for all of the fee and state wells in the Coal Creek Amended POD, including the 20 state wells analyzed in this environmental assessment.

2.2.1.3 Present Relevant Actions Not Part of the Proposed Action

The Montana Board of Oil and Gas Conservation issued a FONSI for the Coal Creek Amended POD EA on March 1, 2006. Based on the analysis of cumulative impacts from development of state and private minerals, they determined that there would be no significant direct, indirect, or cumulative impacts as a result of additional CBNG development in the POD area. As a result, fee minerals would be developed in the POD area surrounding the state section.

2.2.1.4 Reasonably Foreseeable Relevant Actions Not Part of the Proposed Action

Fidelity Exploration and Production Company and Pinnacle Gas Resources have other Plans of Development that are being drafted for other lands within the existing CX Field and outlying areas. Coal bed natural gas development would likely continue in the area over the next 30 years.

All of these activities would also occur if Alternative B, which is described in Section 2.2.2, were implemented.

2.2.2 Alternative B: Additional coal bed natural gas development on state lands (Proposed Action)

2.2.2.1 Principal Actions of Alternative B

- A total of 20 coal bed natural gas wells would be drilled on four separate pad locations in the state section, with five wells per pad site. Each well would be drilled to a different coal seam within the Fort Union Formation. Approximately ½ acre of land would be disturbed for each five-well pad. There would be less than 2 acres of land disturbance total for all four well pads. (See Table 1 for state well list).
- Underground power lines would be placed from three separate power drops to the well pads.
- Two track trails would be utilized to access the four well pads in the state section. There is an existing all weather road leading from the Otter Road (county road) south through state section to the Rancholme 21 battery in Section 21 covered under a land use license.
- Four inch underground water lines would be run from well pads on the state tract to an authorized untreated water discharge outfall (outfall 15) under MPDES permit MT0030457 or to a treatment facility and then discharged into the Tongue River at outfall 16 under MPDES permit MT0030724. Initially, approximately 120 gallons per minute would be produced and potentially discharged from the state coal bed natural gas wells. Each individual well would have a polyethylene flowline installed below grade from the wellhead to transport gas to the Rancholme 21 battery on Section 21. The corridors for the water lines and the gas lines would be identical. Additional beneficial uses include irrigation, transport of water to the Spring Creek and Decker Coal Mines, dust control, and stock water use.
- Fidelity would continue to monitor each discharge point on the Tongue River and file reports in accordance with their existing MPDES permits.

Table 1
Well List for State Section

Well Number	Township	Range	Section	Spot Call
State 11SM/D1-1691	9S	41E	16	NWNW
State 11D2-1691	9S	41E	16	NWNW
State 11D3-1691	9S	41E	16	NWNW
State 11M-1691	9S	41E	16	NWNW
State 11C/W-1691	9S	41E	16	NWNW
State 13SM/D1-1691	9S	41E	16	NWSW
State 13D2-1691	9S	41E	16	NWSW
State 13D3-1691	9S	41E	16	NWSW
State 13M-1691	9S	41E	16	NWSW
State 13C/W-1691	9S	41E	16	NWSW
State 34SM/D1-1691	9S	41E	16	SWSE
State 34D2-1691	9S	41E	16	SWSE
State 34D3-1691	9S	41E	16	SWSE
State 34M-1691	9S	41E	16	SWSE
State 34C/W-1691	9S	41E	16	SWSE
State 42SM/D1-1691	9S	41E	16	SENE
State 42D2-1691	9S	41E	16	SENE
State 42D3-1691	9S	41E	16	SENE
State 42M-1691	9S	41E	16	SENE
State 42C/W-1691	9S	41E	16	SENE

2.2.2.2 Mitigation and Monitoring

The Montana Department of Natural Resources and Conservation, Trust Land Management Division has developed the Coal Bed Natural Gas Field Operating and Reclamation Requirements to mitigate disturbances and cumulative impacts to the environment. A copy of these requirements is provided in Appendix A of this environmental assessment.

The Montana Department of Environmental Quality has the regulatory authority over the monitoring of water quality and air quality issues. Montana Board of Oil and Gas Conservation has the regulatory authority over oil field operations. In conjunction with these regulating agencies, Fidelity has identified the following mitigation and monitoring measures in addition to the standard requirements enforced by MDEQ and MBOGC:

- Each surface discharge point would be monitored and sampled, and reports would be submitted in accordance with its respective MPDES permit requirements.
- Sampling locations along the Tongue River at locations upstream and downstream of the permitted outfalls would be maintained under the respective MPDES permit requirements.
- Fidelity's Storm Water Pollution Prevention Plan for major construction activities requires bi-weekly monitoring and monitoring following major runoff events.
- Groundwater monitoring and mitigation of impacts to existing water users would take place according to the water well agreement negotiated with each landowner.

- The USGS would continue to monitor the Tongue River watershed at their various stream flow monitoring stations in the Tongue River.
- Regional ground water monitoring programs have been implemented in the coal bed aquifers in the area and are administered by the BLM, the MDEQ, and MDNRC. Montana Bureau of Mines and Geology (MBMG) has installed several monitoring wells in the Tongue River, Powder River and Rosebud Creek watersheds, including one in the NWNE of the state section.

2.3 Summary Comparison of the Activities, the Predicted Achievement of Project Objectives, and the Predicted Environmental Effects of All Alternatives

2.3.1 Summary Comparison of Project Activities

Project Activity	Alternative A (No Action)	Alternative B (Proposed Action)
Drill CBNG wells on state land	0 Wells Drilled	20 State Wells Drilled
Overhead Power lines Installed	None	None
Underground Power lines	None	Four corridors branching off of three drops
Two Track Trails/All Weather Roads	One existing all weather road; four existing two track trails	Four new two track trails used to access each of the proposed well pads
Water lines/Gas lines	Water line and gas line for each well. 12" Waterline covered under a LUL.	Water line and gas line installed for each new well.
Water Discharge	Currently, approximately 1450 gpm discharged into Tongue River under existing permit (some state produced water)	Increased discharge under the existing MPDES permits – up to 1600 gpm untreated authorized and up to 1700 gpm treated water discharge authorized
Water Treated – Discharged	None	Most of the volume of water produced would be treated prior to discharge. Permit approved allowing 1700 gpm treated water discharge.
Water Quality/Air Quality Monitoring	Required under existing MPDES permit	Required under existing MPDES permit.

2.3.2 Summary Comparison of Predicted Achievement of Project Objectives

Project Objective	Alternative A (No Action)	Alternative B (Proposed Action)
Develop a coal bed natural gas project in southeastern Montana encompassing federal, fee, and state surfaces/minerals	No additional state minerals would be developed. Federal and fee minerals would continue to be developed. Existing state wells would continue to produce	Additional state, federal, and fee minerals would be developed.
Operate state/fee wells with adjacent/nearby federal lease wells, sharing facilities constructed and operating on the leases	Federal and fee wells would be operated together. Additional state wells would not be drilled.	State, fee, and federal wells would share new and existing facilities to reduce the amount of land disturbance.
Increase the revenue generated for mineral owners	No additional revenue generated for school trust.	State trust fund would receive 12.5% of all additional gas production on state lands for an additional $1.75 million ($3.75 million total royalty generation) for the life of the project.

2.3.3 Summary Comparison of Predicted Environmental Effects

Issue	Alternative A (No Action)	Alternative B (Proposed Action)
Air Quality	No impact to air quality from state activity. Pollutant emissions would occur from federal and fee mineral development. Emissions would be regulated by MDEQ.	Pollutant emissions would occur in the short term but would remain below the limits. Emissions would be regulated by MDEQ.
Cultural Resources	No impact to cultural resources from state activity.	Mitigation measures would be enforced to avoid the two cultural resource sites identified in the state section.
Hydrology	No impact to hydrology from state activity. No additional discharge from state lands. Discharge would continue from state, fee, and federal wells within the existing CX field under their current MPDES permits.	Additional discharge into the Tongue River under the existing MPDES permits. 1600 gpm untreated water authorized and 1700 gpm treated water authorized for discharge into Tongue River.
Lands and Realty	No impact to lands and realty from state activity. Existing grazing lease, oil and gas lease, land use licenses, easement, and coal lease would remain in effect for state lands.	20 additional CBNG wells would be drilled on state lands and related infrastructure put in place. The existing grazing lease, coal lease, oil and gas lease, land use licenses, and easement would remain in place.
Soils	No additional impact to soils from state activity. Grazing of the state section would continue, which may have minor impacts on the soil, such as compaction and erosion. Vehicle travel on designated all weather road and two track trail would continue which may have impacts on the soil.	Increased chance for soil compaction due to increased vehicle travel and increased chance for erosion due to additional topsoil and vegetation removal. Degradation in soil quality could also occur.
Vegetation	No impact to vegetation from state activity. Grazing on state section would continue to harvest vegetation.	Some vegetation would be removed for new well pad construction. Vehicle travel could decrease vegetation quality and quantity. It also increases potential for introduction of noxious weeds.
Wildlife	No impact to wildlife from state activity. Additional offset federal and fee mineral development may impact wildlife in the area.	State section is critical mule deer winter range. Mitigation to avoid disruption of habitat would be necessary.
Social and Economic	No impact to social and economic factors from state activity. State and local income tax would be increased due to federal/fee mineral development. No additional revenue generated for the state trust fund.	State and local income tax increase from federal/fee/state development. State trust fund would receive 12.5% of royalties from new wells in addition to existing wells for on state section for approximately $3.75 million total royalty revenue (original and amended POD) over the life of the project.

2.4 Identification of the Preferred Alternative

Alternative B: Coal bed natural gas development is the preferred alternative.

CHAPTER 3:
AFFECTED ENVIRONMENT

3.1 Introduction

This chapter details the existing condition of the environmental resources and factors of the Coal Creek Amended POD that would affect or that would be affected by implementing either Alternative A or Alternative B. Chapter 3 focuses on the site-specific issues described in Section 1.6.1.

This description of the existing environment in Chapter 3, the description of the activities of Alternative A: No Action in Chapter 2, and the predicted effects of Alternative A in Chapter 4 combine to establish the **baseline conditions** against which the decision maker and the public could compare the potential effects of Alternative B: Coal bed natural gas development on state lands.

3.2 Description of Relevant Affected Resources

3.2.1 Air Quality

Air pollution is controlled through the ambient air quality and emission standards established by the Clean Air Act and under Montana laws implemented by the Montana Department of Environmental Quality (MDEQ). The Clean Air Act Amendments of 1977 created a system for the Prevention of Significant Deterioration (PSD) of "attainment" and "unclassified" area. This program is designed to limit the increase in pollutant areas above a legally defined baseline level (Montana Ambient Air Quality Standards (MAAQS) establishes upper limits), depending on the classification of the area. PSD Class I areas have more stringent limits that PSD Class II areas. The allowable incremental impacts for NO2, SO2, and PM10 within PSD Class I areas are very restricted (MT FEIS).

The closest PSD Class I defined area is the Northern Cheyenne Indian Reservation, which lies approximately 20 miles north of the project area. Pollutants throughout the project area are very limited due to the small number of industrial facilities and residential sources. All of the air quality issues are regulated by the MDEQ and are outlined for the entire project area in the joint EA for the Coal Creek Area and the MT FEIS.

3.2.2 Cultural Resources

Cultural Resources are tangible remains of past human activity within the landscape. Cultural Resources are identified and defined as geographic units or "sites" where past human activity occurred and evidence of past use could be documented. Generally, any site of human activity older than 50 years could be considered a cultural resource.

In 1977, Michael Gregg conducted the Holmes-Decker project, which included an inventory of 7,000 total acres. It included section 16 in its entirety. Fidelity Exploration and Production Company contracted Ethnoscience, Inc. of Billings, Montana to conduct a Class III cultural resource inventory for state section 16. Ethnoscience has completed

three separate investigations covering all proposed well pads and infrastructure areas within the state section.

The first investigation was completed on November 18, 2003 and covered 137 acres. Each proposed well pad location was investigated. At each pad location, a 10-acre area was inventoried, and a 120-meter corridor was inventoried along the two track road corridor running from the southern boundary of Section 16 up to the 22-1691 well pad located in the northwest quarter of section 16.

The second investigation was completed in July 2004, which covered the two-track road corridor proposed in the eastern half of Section 16. The survey conducted included a 150-meter wide corridor along approximately 5659 feet of two track for a total of 127.87 acres.

The third investigation was completed in October 2005. It covered a total of 276 acres. One site (24BH3311) consisting of a single stone cairn situated atop a small knoll located near the north end of the north-south trending ridge overlooking Deer Creek to the east and to the north (Wagers, 2005). However, this site is recommended not eligible for inclusion to the National Register of Historic Places.

Michael Gregg's 1977 investigation identified one lithic scatter site (24BH1559). It consisted of porcellanite and chert flakes and the blade of a probable corner-notched projectile point. Based on the projectile point, the site was determined to be associated with a late Plains Archaic occupation.

Several other cultural resource investigations were competed in the POD area dating back to the 1970's. They are outlined in the joint EA for the Coal Creek POD. No cultural properties were identified in these previous investigations. In addition, no other cultural properties were identified during the field investigations, file searches at the Montana State Historic Preservation Office (SHPO), the National Register of Historic Places (NRHP) database, or from the General Land Office.

3.2.3 Hydrology

The entire Coal Creek POD lies within the Tongue River Watershed. Fidelity currently produces 496 CBNG wells within the Tongue River Montana Project (TRMP) of which 31 are DNRC Conservation Easement wells, the water of which is permitted to be pumped solely to the Decker Coal Mine. Total water production from the remaining 465 producing wells TRMP wells is approximately 1450 gallons per minute (gpm) with nearly all of the water being discharged into the Tongue River or transferred to the Spring Creek Coal Mine for industrial use. A small percentage of the produced water is used by local ranchers for livestock watering.

3.2.3.1 Surface Water

The Tongue River Watershed covers approximately 1477 square miles. It originates in the Big Horn Mountains in Wyoming and runs north and is perennial throughout its length to the Yellowstone River. There are many tributaries to the Tongue River, including Deer Creek and Coal Creek, both near the project area.

There are two unnamed ephemeral drainages of Deer Creek that cross through the state section. More information relating to the surface waters within the project area could be found in Chapter 3 of the MT FEIS and the original Coal Creek POD Joint EA.

Historical data obtained from USGS show a range of EC and SAR values for the Tongue River that vary significantly from one point to another. These values could be found in the joint EA and also discussed in Chapter 3 of the MT FEIS.

Fidelity has an existing MPDES permit (MT0030457) that expires on March 31, 2011 that allows discharge into the Tongue River through 15 specified outfalls. Discharge between November 1 and February 28 shall not exceed 2500 gpm. Between March 1 and June 30, the maximum discharge rate is 2375 gpm, and from July 1 to October 31, the maximum discharge rate is 1600 gpm. Additional flow restrictions are applicable during the July 1 to October 31 seasonal period. Total discharges to the upper reach of the Tongue River are limited to 1000 gpm. The remainder of the permitted flows may be discharged below the final Wyoming border. Other limitations imposed on this permit include:

- Total suspended solids (TSS) monthly average of 25 and daily maximum of 30 mg/L for all permitted outfalls.
- Effluent pH shall remain between 6.5 and 9.0 standard units. Any single analysis beyond the limitation is a violation of the permit conditions.
- When daily stream flow values are less than 35 cubic feet per second (cfs) as recorded at USGS gauging station at the State Line near Decker, the permittee shall conduct daily instream monitoring of specific conductance at an identified location. The permittee shall cease discharging to the Tongue River if the measured instream specific conductance exceeds the following value on any two consecutive calendar days and cannot recommence until the flow in the Tongue River at the gauge identified exceeds 35 cfs:

November 1 through March 1:	2500 µS/cm
March 2 through October 31:	1500 µS/cm

- Effluent flow rate must be monitored continuously.
- pH, temperature, specific conductivity, and total dissolved solids must be measured weekly by permit identified measurement types.
- Total suspended solids, sodium, calcium, magnesium, sodium adsorption ratio, ammonia, fluoride, total nitrogen, nitrate, Kjeldahl nitrogen, and phosphorous must be measured monthly by permit identified measurement types.
- Oil and grease and whole effluent toxicity must be measured quarterly by permit identified measurement types.
- Special conditions outlined in the permit include supplemental effluent monitoring, instream monitoring of the Tongue River for outlined parameters, nutrient monitoring, mandatory effluent diffuser installation ground water monitoring, and toxicity reduction evaluation if necessary.

Fidelity has also obtained a second MPDES permit that allows for 1700 gpm of treated produced coal bed natural gas water to be discharged through one permitted outflow. Treatment consists of ion exchange and fluoride removal with provisions to allow blending of raw produced waters up to the instream water quality standards. The permit expires on March 31, 2011. The limitations imposed through this permit include:

- Between November 1 and March 1:
  - Total Suspended Solids average monthly maximum is 25 mg/L and daily maximum is 30 mg/L.
  - Total Nitrogen average monthly maximum is 1.2 mg/L and daily maximum is 1.7 mg/L
  - Sodium Adsorption Ratio average monthly maximum is 5 and daily maximum is 7.5.
  - Specific Conductance average monthly maximum is 1500 µS/com and daily maximum is 2500 µs/cm.
  - Percentage of untreated produced water shall not exceed 23% of the produced water delivered to the facility.
- Between March 2 and June 30:
  - Total Suspended Solids average monthly maximum is 25 mg/L and daily maximum is 30 mg/L.
  - Total Nitrogen average monthly maximum is 1.3 mg/L and daily maximum is 1.8 mg/L
  - Sodium Adsorption Ratio average monthly maximum is 3 and daily maximum is 4.5.
  - Specific Conductance average monthly maximum is 1000 µS/com and daily maximum is 1500 µs/cm.
  - Percentage of untreated produced water shall not exceed 14% of the produced water delivered to the facility.
- Between July 1 and October 31:
  - Total Suspended Solids average monthly maximum is 25 mg/L and daily maximum is 30 mg/L.
  - Total Nitrogen average monthly maximum is 1.1 mg/L and daily maximum is 1.6 mg/L
  - Sodium Adsorption Ratio average monthly maximum is 3 and daily maximum is 4.5.
  - Specific Conductance average monthly maximum is 1000 µS/com and daily maximum is 1500 µs/cm.
  - Percentage of untreated produced water shall not exceed 14% of the produced water delivered to the facility.

Other permit limitations include:

- Effluent pH shall remain between 6.5 and 9.0 standard units.
- Treated effluent flow rate and raw water used in blending must be monitored continuously.
- pH, temperature, and specific conductivity must be measured daily by permit identified measurement types.

- Total suspended solids, total dissolved solids, sodium, calcium, magnesium, sodium absorption ratio, ammonia, and fluoride must be measured weekly by permit identified measurement types.
- Total nitrogen, nitrate + nitrate, Kjeldahl nitrogen, and phosphorous must be measured monthly by permit identified measurement types.
- Whole effluent toxicity, mercury, radium, and arsenic must be measured quarterly by permit identified measurement types.
- Special conditions outlined in the permit include supplemental effluent monitoring, groundwater monitoring, nutrient monitoring, mandatory mixing zone diffuser installation, and toxicity reduction evaluation if necessary.

3.2.3.2 Ground Water

The sands and coals of the Fort Union formation are a major source of groundwater in the project area. Wells within these formations can produce as much as 40 gpm, but typically yield closer to 15 gpm. This formation generally is encountered from approximately 50 feet to 600 feet in the project area. CBNG produced water quality information by coal seam is presented in the Table 2 below.

Table 2
Coal Bed Natural Gas Produced Water Quality

Coal Seam	pH	TDS (mg/L)	SAR	EC (µmhos/cm)
Dietz 1	8.0	1640	55.8	2710
Dietz 2	8.3	1670	66.7	2700
Dietz 3	8.0	1630	71.3	2630
Monarch	8.3	1470	84.9	2390
Carney	8.3	1620	70.8	2610

A groundwater rights search was done for the original Coal Creek POD. Six existing ground water rights were found within the project area and a one-mile radius of the POD. Of these six water rights, none were within the state section. However, Decker Coal Company has a 25 gallon per minute domestic water well in the southeast quarter of section 8, which is adjacent to the state section. It is approximately 100 feet deep.

3.2.4 Lands and Realty

There is currently a coal lease issued to Decker Coal Mine that covers the entire state section. It was issued in 2005 as a renewal of a previous lease. No activity has been proposed for the coal lease, so there are no cumulative impacts associated with the coal development. If coal development is proposed in the future, the cumulative impacts of the concurrent actions would be considered at that time.

The surface of the state section is leased to Rancholme Cattle Company for grazing purposes. A small percentage of the state section is covered with sagebrush (Artemisia tridentata), which limits the overall potential AUM's for this grazing lease. The AUM's for this lease is set at 126.

Fidelity holds two land use licenses for coal bed natural gas related activity on the state section. The first license authorizes use of the existing all weather road running from the Otter Road (county road) south through state section to the Rancholme 21 battery in Section 21. The second land use license is for a 12" water line for the transportation of produced CBNG water. Powder River Gas Corporation also has an easement for an overhead power line that travels through the section.

3.2.5 Soils

Information regarding soil composition was presented in the Coal Creek POD that was submitted to MBOGC, BLM, and DNRC in February 2004. The information was collected from the Natural Resource Conservation Service (NRCS). The Soil Survey of Big Horn County, Montana (1977) was also used to obtain site-specific soil summaries for the entire project area.

Soils in the project area have developed in alluvium and residuum derived from the Tongue River Member of the Fort Union Formation and the Eocene Wasatch Formation (WWC Engineering, 2004). Light to dark yellow and tan siltstone and sandstones with coal seams in a matrix of shale comprise the lithology of the project area. In many areas the near surface coals have burned, baking the surrounding rock, producing red, hard porcellanite generally referred to as clinker or scoria. Topographic and geomorphic variations are prominent in the area due to the differences in lithology. An erosion resistant cap of clinker or sandstone often protects high ridges and hills.

Within the state section, eight different soil types exist (WWC Engineering, 2004). The most prominent soil type in the section is the Midway-Thedalund complex, hilly (MVf). This complex is comprised of hilly to steep soils in the sedimentary uplands. It consists of approximately 60 percent Midway silty clay loam, 25 percent Thedalund loam, and 15 percent Shale outcrop and rock outcrop, with slopes ranging from 15 to 35 percent. This type of soil has a high potential for erosion.

Three different Thedalund complexes are present in the state section. These soils formed in material weathered in place of shale. They consist of moderately undulating to very steep, well drained soils in the sedimentary uplands. Permeability is moderate and available water capacity is low to moderate. These complexes are generally suitable for rangeland and wildlife use, but not farming.

The first complex is the Thedalund-Cushman loams (THb). Runoff is medium, and the hazard of erosion is moderate. In the second complex, the Thedalund-Midway (THe) complex, is made up of rolling soils in the sedimentary uplands and has slopes ranging from 8 to 15 percent. Runoff is medium, and the hazard of erosion is moderate. The final complex is the Thedalund-Travessilla loams (THk) complex. It is made up of undulating and rolling soils in the sedimentary uplands. Runoff is medium and the hazard of erosion is slight.

The fifth type of soil present within the state section is the Thurlow-Midway silty clay loam (To). It generally has slopes ranging from 4 to 15 percent. It is made up of gently sloping and strongly sloping soils on fans, foot slopes, low knolls, and short ridges. Areas typically include an entire valley below the steeply rising hills and ridges on its border. Runoff is medium, and the hazard of erosion is moderate.

Three other soil types exist within the state section, but they lie primarily outside of the planned development area. These include the Renohill silty clay loam, undulating (Re), Terrace escarpments, loamy (TCb), and the Hysham loam (Ho). Information is available on all of these soil types from the Project Soil Survey completed by WWC Engineering, and also from the Montana Natural Resource Conservation Service.

3.2.6 Vegetation

The Coal Creek POD is classified as part of the Central Grasslands. Principal species found throughout this area include western wheatgrass, prairie junegrass, big sagebrush and silver sagebrush (Wagers, 2004). The project area is sparsely vegetated with sagebrush, prairie grasses and juniper, providing a ground surface visibility of approximately 70 percent.

A 2004 field evaluation of the entire state section revealed the following species and composition around the well pads and proposed infrastructure:

COMMON NAME	SCIENTIFIC NAME	COMPOSITION
Western Wheatgrass	Agropyron smithii	15%
Needleandthread	Stipa comata	15%
Blue grama	Bouteloua gracilis	10%
Prairie junegrass Sandberg bluegrass	Koeleria pyramidata Poa sandbergii	15%
Threadlead sedge	Carex filifolia	5%
Forbs		10%
Big Sagebrush	Artemisia tridentata	20%
Plains Pricklypear Cactus Broom Snakeweed Fringed Sagewort	Opuntia Polyacouldtha Gutierrezia sarothrae Artemisisa frigida	5%
Kentucky Bluegrass Cheatgrass	Poa pratensis Bromus tectorum	5%

A search of the Montana Natural Heritage Program's Plant Species of Concern List revealed no element occurrences on state lands (Montana Natural Heritage Program, 2003).

3.2.6.2 Noxious Weeds

No state listed noxious weeds were discovered by a search of inventory maps, databases, or field evaluations.

3.2.7 Wildlife

Fidelity contracted Hayden-Wing Associates (HWA) to perform baseline wildlife surveys of the Coal Creek POD in 2003 and general wildlife surveys during 2004 on and around proposed coal be natural gas development areas. Surveys conducted included aerial surveys for wintering bald eagles on and within a one mile buffer of the POD, ground surveys of greater sage grouse leks and sharp tailed grouse leks on and within a one mile buffer of the POD, ground surveys for burrowing owl nests on and within 0.5 miles of the POD, ground surveys for potential mountain plover habitat on and within 0.5 miles of the POD, ground surveys to determine the presence/absence of breeding mountain plover on and within 0.5 miles of the POD, ground surveys of black tailed prairie dog colonies on and within 0.5 miles of the POD, and aerial surveys of mule deer within designated winter range.

3.2.7.1 Raptors

Eighteen raptor nests were found within the surveyed area of the Coal Creek Amended POD and its one-mile buffer. Only five of the 18 nests were located in the actual POD. These raptors included three red tailed hawk nests and two great horned owl nests. None of the three nests were located on state lands. The closest nest was a Red-tailed hawk and it was approximately ¼ mile from proposed activity on state lands.

Three Burrowing Owl nests were located just outside the POD boundary. Two are approximately ½ mile from the state section and the third is approximately 1-1/2 miles from the state section. This raptor species is on the Montana Animal Species of Concern List (Montana Natural Heritage Program, 2004).

No active bald eagle nests were located within the Coal Creek Amended POD or its one-mile buffer. One nest was located approximately 1.6 miles southwest of the POD. The bald eagle is listed under the Endangered Species Act of 1973, as amended in 1982. The regulations and guidelines require a No Surface Occupancy (NSO) within ½ mile of nests that have been active during the past 7 years. The one nest is approximately 5 ½ miles from any proposed activity on state lands.

3.2.7.2 Prairie Dogs

Three black-tailed prairie dog colonies were located on or partially within 0.5 miles of the Coal Creek Amended POD. One was located entirely outside of the POD boundaries, but within the 0.5 mile buffer and the other two were at least partially within the POD. Of these three colonies, none were located directly on state lands. Only one colony was within 0.5 miles of the state section. This colony is 68.6 acres in size. The other two colonies are greater than 0.5 miles from the state section.

According to the USFWS guidelines for determining suitable black-footed ferret habitat, a black tailed prairie dog complex is defined as an aggregation of two or more neighboring prairie dog colonies separated by a distance of less than 4.34 miles and totaling 80 acres or more. The three towns within this POD area and its

0.5 mile buffer meet these criteria and would be considered suitable habitat for black-footed ferrets.

3.2.7.3 Plover

Two areas of potential mountain plover habitat were found on and within the 0.5 miles buffer of the POD. One was located within the POD and the other is entirely outside the POD, but within the 0.5-mile buffer. Of these two potential habitats, only one is within a 0.5-mile buffer of the state section. It is approximately 43.2 acres in size. No mountain plover were seen or heard during the surveys conducted in 2003 or 2004.

3.2.7.4 Greater Sage Grouse and Sharp Tailed Grouse

Information regarding greater sage grouse and sharp tailed grouse lek locations within the Coal Creek POD and a two-mile buffer were obtained from the BLM Miles City Field Office, Decker Coal Company Biologist, Wyoming Game and Fish Department, and the BLM Buffalo Field Office. Eight previously documented or recorded leks lie within the survey area, one of them being greater sage grouse and seven sharp tailed grouse leks. The greater sage grouse lek is of unknown status. Four of the sharp tailed grouse leks lie within the POD and three within the one mile buffer. An inactive sharp tailed grouse lek lies approximately ¼ mile west of the state section and a lek of unknown status lies approximately ½ mile northwest of the state section. None of the leks occur on state surface.

3.2.7.5 Big Game

Approximately 1/2 of the state section lies within an area designated by the BLM as crucial mule deer winter habitat. During the wildlife surveys, elk, mule deer, white-tailed deer, and pronghorn antelope were observed and documented.

3.2.8 Social and Economic

Development and production activity continues to include state land ownership in the CX Field and surrounding areas, located in Big Horn County. Royalty revenues received for the month of January 2006 totaled $145,661.71 generated from approximately 2244 acres of state owned land in the Badger Hills POD, Dry Creek POD, and Coal Creek POD. Sixteen wells in the original Coal Creek project were drilled and completed, with 4 being hooked up in November 2005 and the remaining 12 hooked up in December 2005. Total royalties for CBNG wells in this state section to date is $46,437. Total royalty generated for the state trust lands for all CBNG production through November 2005 is $2,806,703.

A more in depth analysis of the social and economic conditions of the project area could be found in Chapter 3: Affected Environment, and the Socioeconomic appendix of the MT FEIS.

CHAPTER 4:
ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This chapter forms the scientific and analytic basis for the summary comparison of effects presented in Chapter 2 of this Environmental Assessment. This chapter describes the environmental consequences or effects of the proposed action and the cumulative effects of concurrent and future state activities within the analysis areas.

4.2 Predicted Attainment of Project Objectives of all Alternatives

4.2.1 Predicted Attainment of Project Objective #1: Develop a coal bed natural gas project in southeastern Montana encompassing federal, fee, and state surfaces and minerals.

4.2.1.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

Under this alternative, existing coal bed natural gas development would remain on the state section as approved in the original Coal Creek POD and federal and fee lands adjacent to the state section would be developed on 2 wells per coal bed per 160 acres in the project area. Since this project areas lies within the existing CX field, increased development, including infill drilling, would expand around the underdeveloped state section in all directions. Natural gas from the coal beds on the state tract could be drained and produced without compensation from offset wells drilled on the adjacent sections.

4.2.1.2 Alternative B: Coal Bed Natural Gas Development (Proposed Action)

Under this alternative, increased coal bed natural gas development would occur on the state tract concurrently with the other lands in the Coal Creek Amended POD area. This provides a more reasonable, efficient, and systematic means of developing the gas field. In addition, concurrent development of the state section with the federal and private lands would prevent drainage, protect the correlative rights of the state, thereby ensuring the state receives payment for the minerals removed from the state tract.

4.2.2 **Predicated Attainment of Project Objective #2:** Operate state and fee wells in conjunction with adjacent/nearby federal lease wells, sharing facilities constructed and operating on the leases.

4.2.2.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

Under this alternative, new fee and federal wells would be operated independently of any state activity. As a result, if additional development of this state section were to be considered at a later date, additional facilities and infrastructure may be required on the state surface in order to produce the wells.

4.2.2.2 Alternative B: Coal Bed Natural Gas Development (Proposed Action)

Under this alternative, fee, federal, and state wells would be operated together, eliminating the need of unnecessary land disturbances and additional infrastructure.

4.2.3 **Predicted Attainment of Project Objective #3:** Increase the revenue generated for the State of Montana school trust fund.

4.2.3.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

Under this alternative, the economic contribution to the School Trust would be limited to the current lease and license rentals and royalties generated from the existing 16 wells on this section that were approved under the original Coal Creek POD. This would have a direct effect upon the TLMD's fiduciary obligation to generate revenue for the beneficiaries of the school trust fund. Increased development would continue around the state section allowing drainage of state minerals. This would reduce or eliminate the potential for additional development of the state minerals in the future.

4.2.3.2 Alternative B: Coal Bed Natural Gas Development (Proposed Action)

Under this alternative, twenty additional wells would be drilled on the state section. This would positively impact local and state tax revenue. The state school trust would receive royalty revenue equivalent to 12.5% of the gross value of the additional produced natural gas from the state tract as well as 12.5% of production from the existing 16 wells. Based upon performance of the other wells in the CX field and the current gas price, this would generate over $3.75 million royalty revenue for the Common School Trust over the life of the project from the original Coal Creek POD and the Coal Creek Amended POD.

4.3 Predicted Effects on Relevant Affected Resources of All Alternatives

4.3.1 Predicted Effects on Air Quality (Issue #1)

4.3.1.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

Direct and Indirect**:** There would be no direct or indirect impacts as a result of this alternative.

Cumulative: No cumulative impacts as a result of new state activities. Development of minerals on federal and fee lands would continue under the No Action alternative. Pollutant emissions would occur from the drilling activities on these lands and could deteriorate air quality in the project area. Since there is no additional state development, only activities on fee and federal lands would contribute to the cumulative impacts on air quality. These cumulative impacts are discussed in more detail in the original Coal Creek POD Joint EA, the MBOGC EA for the state and fee wells for the Amended POD, and in the MT FEIS.

4.3.1.2 Alternative B: Coal Bed Natural Gas Development (Proposed Action)

Direct and Indirect: Pollutant emissions would occur during the drilling phase of the twenty wells on state lands. Localized short term increases in CO, No_x, SO_2, $PM_{2.5}$ and PM_{10} concentrations would occur. However, maximum concentrations are expected to remain well below the applicable state, local, and federal air quality standards. The Montana Department of Environmental Quality has the regulatory authority to review and issue permits covering all new or modified air pollution emission sources. These permits are required prior to construction.

During the production phase of this project, additional vehicle traffic may result in an intermittent deterioration in air quality in the area. Dry conditions may cause a higher volume of dust in the air.

The following mitigation measures have been proposed for this alternative:

- Fidelity would install remote monitoring equipment to minimize the amount of vehicle traffic to and from the individual well sites. This would decrease the pollutant emissions during the production phase of the project.
- The Montana Board of Oil and Gas Conservation regulates gas venting. They prohibit venting of commercial quantities of gas. Since infrastructure is already in place on the state section and throughout CX Field, only a limited amount of testing would occur prior to well hookup.

Cumulative: The cumulative impacts to air quality are addressed in the MT FEIS, which analyzed cumulative impacts of drilling up to 26,000 coal bed natural gas wells within Montana. Cumulative impacts resulting from the development of state, federal, and private lands within the Coal Creek Project have been analyzed in the original Coal Creek POD Joint EA and the MBOGC EA for the state and fee wells in the Amended POD.

4.3.2 Predicted Effects on Cultural Resources (Issue #2)

4.3.2.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

Direct and Indirect: There would be no direct or indirect impacts to cultural resources as a result of state activity under this alternative.

Cumulative: There would be no cumulative impacts to cultural resources under this alternative.

4.3.2.2 Alternative B: Coal Bed Natural Gas Development (Proposed Action)

Direct and Indirect: One cultural resource site was identified from a 1977 cultural resource review. Site 24BH1559 is a lithic scatter in the southwest quarter of the section. During the 2003 and 2004 cultural resource investigations, evidence of the lithic scatter was not seen. The proposed activity would not disturb the cultural resource site as precautions would be taken to avoid the site.

A second cultural resource site (24BH3311) consisting of a single stone cairn situated atop a small knoll located near the north end of the north-south trending ridge overlooking Deer Creek to the east and to the north was also identified (Wagers, 2005). However, this site is recommended not eligible for inclusion to the National Register of Historic Places. The proposed activity would not disturb the cultural resource site.

The following mitigation measures would be enforced for this alternative:

- If any cultural values (sites, artifacts, human remains) are observed that were not previously addressed and reviewed, they would be left intact, operations stopped, and the TLMD notified immediately. Fidelity is responsible for informing all persons in the area who are associated with this project that they would be subject to prosecution for knowingly disturbing historic of archaeological sites, or for collecting artifacts.

TLMD would conduct an evaluation of the cultural values to establish appropriate mitigation, salvage, or treatment. If additional archaeological survey work is required, lessee would be responsible for this expense. [This is required in both the lease agreement and the Coal Bed Natural Gas Field Operating and Reclamation Requirements in Appendix A].

Cumulative: No cumulative impacts to cultural resources would occur as a result of state land development. No sites have been determined eligible for the National Register within this section.

4.3.3 Predicted Effects on Hydrology (Issue #3)

4.3.3.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

Direct and Indirect: No direct or indirect impacts to hydrology would occur as a result of state activity under this alternative. The existing sixteen wells would continue to produce and water from these wells will continue to be discharged under the existing MPDES permits.

Cumulative: The sixteen existing state wells would continue to produce under this alternative in addition to the existing federal and fee wells in the original project and the additional fee wells approved under the MBOGC EA for the Amended POD area. However, no additional impacts would occur under this alternative. Additional development of federal and fee minerals in Amended POD would continue, which would have impacts to both the groundwater and the surface water in the area. Information regarding the cumulative impacts of federal and fee mineral development could be found in the original Coal Creek POD Joint EA and the MBOGC EA for state and fee wells in the Amended POD.

4.3.3.2 Alternative B: Coal Bed Natural Gas Development (Proposed Action)

Direct and Indirect: Fidelity currently produces water from 496 coal bed natural gas wells in the TRP area, of which 31 are Montana Department of Natural Resources and Conservation (DNRC) Conservation Easement wells, the water from which is permitted to be pumped solely to the Decker Coal Mine. The current water production rate from the remaining 465 wells is approximately 1450 gallons per minute (gpm) with nearly all of that being discharged into the Tongue River under an existing MPDES permit (MT0030457) or transferred to the Spring Creek Coal Mine for industrial uses. A small percentage of the produced water is provided to local ranchers to supplement livestock watering as needed.

The 99 fee wells in the original Deer Creek North POD have all been drilled and are awaiting connection and an additional 116 wells (112 fee and 4 state) have been approved in an amended POD for the same area. The 71 federal wells in the original Deer Creek North POD area and the 68 federal wells in the amended POD area will not be drilled until the Bureau of Land Management completes an environmental assessment for the project. The Deer Creek North POD and Amended POD approved wells (fee and state) will add approximately 1290 gpm of produced water in addition to the existing 1450 gpm that is produced from the remaining wells in CX field. The 63 state and fee wells in this infill drilling POD will add approximately 378 gpm to the total water production. Total water

production from all producing wells and wells that have been approved and are awaiting completion will be approximately 3118 gpm. Initial water production from the state wells in this amended POD only, based on a 6 gpm initial production rate assumption, would be 120 gpm. The total water produced will steadily decline over time to approximately 3 gpm. This water would be discharged to the Tongue River under one of the two existing MPDES permits. Once the water production exceeds the volume permitted in the untreated water discharge permit (MT0030457), water would be transported to a water treatment facility, which would be located two miles west of the POD area. Storage ponds would be constructed at the treatment facility as a bypass holding pond to provide approximately 17 acre feet of backup storage during treatment plant downtime. There is also an existing reservoir with a capacity of 44.6 acre-feet at the treatment facility. The discharge permit for untreated water, the discharge permit for treated water, and the storage ponds would provide Fidelity with sufficient water management capacity to accommodate anticipated water production from existing and proposed Coal Creek project development. No pits or ponds would be located on the state section.

Cumulative Impacts: The two principal constituents of CBNG water that present the greatest concern are SAR and salinity (Horpestad & Skaar, 2001). Depending on the relative amounts of these two constituents and the makeup of the soil, direct discharge of CBNG water onto the surface could result in deterioration of soil hydraulic characteristics and decrease of crop production as the energy that the crops need to extract the water from the soil increases. Thresholds for SAR and salinity have not become standard, as the affects are very site specific. However, the MPDES permits have water quality standards that must be adhered to. The Coal Creek Amended POD water management plan incorporates water treatment prior to discharge. Under an approved water management plan, 95 percent or more of the total salts (primarily sodium) would be removed from the water. This would increase the quality of the water and also minimize the impacts that discharging the untreated water would have on the soil. No water discharge would occur on the state section. Discharge to waters of the state is regulated by MDEQ. Other beneficial use is at the discretion of the landowners and subject to any applicable regulations. Additional information regarding the cumulative impacts could be found in the MT FEIS and the original Coal Creek POD Joint EA.

4.3.4 Predicted Effects on Lands and Realty (Issue #4)

4.3.4.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

Direct and Indirect**:** There would be no direct or indirect impacts to lands and realty as a result of state activity under this alternative. The existing surface grazing lease would not be impacted and there would be no effects to the available grazing land. Grazing patterns would not change. The existing coal lease issued to Decker Coal Mine would remain in effect. The two land use licenses issued to Fidelity for the all weather access road and a water pipeline

would remain in effect and the Powder River Energy Company easement for an overhead powerline would remain in effect.

Cumulative: Under this alternative, no cumulative impacts would occur as a result of state activities. There have been no proposals from our coal lessee to pursue the minerals under their lease. In the future, if Decker Coal Mine decides to mine the coal beneath the surface, a separate environmental analysis would have to be completed and the cumulative impacts of all issues would be analyzed.

4.3.4.2 Alternative B: Coal Bed Natural Gas Development (Proposed Action)

Direct and Indirect**:** Under this alternative, the existing surface grazing lease would remain in effect. Total lands available for grazing purposes would be reduced by approximately 2 acres during the construction phase. However, this would be short term. After the wells have been completed and temporary disturbance reclaimed, the total area unavailable for grazing would be less than ½ acre. The existing coal lease issued to the Decker Coal Mine would remain in effect. No proposals for coal development have been received. The land use licenses for Fidelity's access road and waterline would remain in effect as would the easement for an overhead powerline.

Cumulative: Under this alternative, no cumulative impacts would occur to the lands and realty as a result of state activity. The increase in produced water would serve as a beneficial use to our surface lessee in the future. If such beneficial use were proposed for the state section, that proposal would have to be reviewed and approved by the Department and the appropriate permits would have to be obtained.

4.3.5 Predicted Effects on Soils (Issue #5)

4.3.5.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

Direct and Indirect: Under this alternative, no additional coal bed natural gas development would occur on the state section. The existing surface grazing lease would remain in effect, which would allow for the continuing harvest of vegetation on state lands. The existing roads and two track trails would continue to be utilized to access the approved wells.

Cumulative: Under this alternative, no cumulative impacts would occur as a result of additional state activities. The sixteen existing wells on the state section would continue to produce. Additional information regarding the cumulative impacts as a result of fee, federal, and state mineral development is available in the Joint EA for the Coal Creek POD, MBOGC's EA for the Amended POD, the MT FEIS, and the TLMD EA for the original Coal Creek POD.

4.3.5.2 Alternative B: Coal Bed Natural Gas Development (Proposed Action)

Direct and Indirect: Under this alternative, the project area would be developed as proposed in the Amended POD. Four separate well pads would be constructed for the purpose of drilling twenty coal bed natural gas wells. It is estimated that each five well pad site would disturb approximately ½ acre. Topsoil would be moved and stockpiled prior to pad construction. Two mud pits would be

excavated on the pad site to contain drilling fluids and water. Upon completion of a productive well, approximately three quarters of the disturbance would be reclaimed according to the Coal Bed Natural Gas Field Operating and Reclamation Requirements in Appendix A, and the other quarter would be reclaimed upon plugging and abandoning the wells.

Drilling and completing the wells under Alternative B may cause minimal compaction, erosion, and soil quality degradation. Topsoil removal reduces the soil quality on the wellsites. The longer the soil remains exposed to the atmosphere and adverse weather conditions, the more likely erosion would occur (Muckel, 2004). All of the soils found in the state section have moderate to high erosion hazards. This erosion rate is increased when accompanied by high winds and rain periods. The following mitigation measures would be enforced to minimize soil damage and erosion:

- Construction is restricted to dry or frozen conditions
- Excavation of the well pad and pits must be done immediately before construction instead of exposing the soil for several months
- Cover the disturbed soils with vegetation or mulch as soon as possible
- Other requirements are outlined in Appendix A.

In addition to the well pad construction, there would be four new two track trails (one for each proposed well pad) on the state section. The water, gas, and underground power lines would be installed in a common corridor to reduce the potential for erosion, compaction, and soil quality deterioration. In most cases, the utility corridors would lie along the two track trails. In general, vehicle travel could compact the soil. Depending on the amount of compaction, infiltration could be decreased and the potential for runoff and erosion could increase. Compaction potential is increased in wet conditions. As a mitigation measure, vehicle travel would be restricted to dry and frozen conditions and only on approved roads. Travel across undisturbed rangeland or unapproved trails would be prohibited.

Cumulative: State and local laws and the Clean Water Act require that erosion and sediment control plans be developed prior to construction. Montana Department of Environmental Quality has the regulatory authority over water quality issues and they would address these issues when necessary. The joint EA for the original Coal Creek POD area, the MBOGC EA for the Amended POD area, the MT FEIS, and the TLMD EA for the Original Coal Creek POD area have further detail on the cumulative impacts to soils from CBNG development.

Mitigation measures for soil impacts are outlined in the Coal Bed Natural Gas Field Operating and Reclamation Requirements in Appendix A of this assessment.

4.3.6 Predicted Effects on Vegetation (Issue #6)

4.3.6.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

Direct and Indirect: No direct or indirect effects on vegetation would occur to state land as a result of this alternative. The existing surface grazing lease would remain in effect, which would continue to allow for harvest of vegetation. Compaction could occur as a result of animals walking across the rangeland, but the impacts are very minimal. The sixteen existing wells would continue to produce and vehicle traffic for these wells would continue. However travel is restricted to approved routes, so no additional impact should occur as a result of this alternative.

Cumulative: No cumulative impacts to vegetation would occur as a result of state activities under this alternative.

4.3.6.2 Alternative B: Coal Bed Natural Gas Development (Proposed Action)

Direct and Indirect: Well pad construction, road construction, and infrastructure would require that the vegetation and topsoil be removed on approximately 2 acres of the state section. This would temporarily reduce the amount of vegetation available to livestock and wildlife. The impacts to vegetation from vehicle travel would include plant growth restriction due to soil compaction and the increased potential for introduction of noxious weeds to the surface. In addition, the well pad disturbance would remove vegetation temporarily until reseeding is complete. However, these impacts would be short term and minimal.

Mitigation measures that would be enforced include:

- Upon completion of a commercial well, 75% of the disturbed well pad area would be reseeded with native grasslands and techniques outlined in Appendix A and site specific reclamation plans prescribed by the land offices.
- Vehicle travel would be restricted to dry or frozen conditions
- Prevention and control measures would be required for noxious weeds as outlined in Appendix A.

Cumulative: A reduction in the vegetation amounts and quality would reduce the number of acres of land available for grazing. However, disturbance is short term and minimal. Any land that is disturbed would be reclaimed and reseeded. The total number of AUMs available for grazing would not change.

4.3.7 Predicted Effects on Wildlife (Issue #7)

4.3.7.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

Direct and Indirect: No direct or indirect impacts as a result of state activity under this alternative.

Cumulative: There would be no cumulative impacts as a result of state activity under this alternative. However, federal and fee minerals would be developed which could impact the wildlife in the area. For details on the cumulative impacts

on wildlife for federal, fee, and state development, refer to the Coal Creek POD Joint EA and the MT FEIS.

4.3.7.2 **Alternative B: Coal Bed Natural Gas Development (Proposed Action)**

4.3.7.2.1 Raptors

Direct and Indirect: During the wildlife survey conducted by HWA, eighteen raptor nests were found within the surveyed area of the Coal Creek Amended POD and its one-mile buffer. None of these nests were located on state lands. The closest nest was the Red-tailed hawk, which is approximately ¼ mile from the state section and approximately ½ mile from any proposed activity on state lands. Two burrowed owl nests were located approximately ½ mile from the state section line and 3/4 mile from proposed activity. Both the Bald Eagle and the Burrowed Owl are listed on the Montana Species of Concern List. No active bald eagle nests were located within 5 miles of any proposed activity on state lands.

Cumulative: The cumulative impacts to raptors from the development of the entire project area may include direct habitat loss and displacement due to infrastructure and human disturbance. These, and other potential impacts are outlined in the original Coal Creek POD Joint EA, the TLMD Coal Creek POD EA, and the MT FEIS.

4.3.7.2.2 Prairie Dogs

Direct and Indirect: During the wildlife survey, no prairie dog colonies were located on state lands. The nearest colony was within 0.5 miles of the state section and was 68.6 acres in size. Based on USFWS guidelines for determining suitable black-footed ferret habitat, a black tailed prairie dog complex is defined as an aggregation of two or more neighboring prairie dog colonies separated by a distance of less than 4.34 miles and totaling 80 acres or more. The three towns within the POD and its 0.5 mile buffer meet these criteria and would be considered suitable habitat for black footed ferrets.

There would be no direct contact with the prairie dog complex as a result of activity on state lands. All state development would lie within section 16. The prairie dog complex lies just northwest of the section, outside the section line. The nearest well pad is approximately one mile away from the complex and the two track trail that would be used to access the nearest well pad enters the location from the south. As a result, disturbance to prairie dogs and prairie dog complexes from state activities would be minimal.

Cumulative: Three total prairie dog colonies were located on or partially within 0.5 miles of the Coal Creek POD. Of these three colonies, only one was within the POD boundary. This colony lies within the boundaries of Section 20, which is a mix of federal and fee minerals. The cumulative

impact to prairie dogs are discussed in more detail in the Joint EA and the MT FEIS.

4.3.7.2.3 Mountain Plover

Direct and Indirect: Two areas of potential mountain plover habitat were found on and within the 0.5-mile buffer of the POD. One was located within the POD and the other is entirely outside the POD, but within the 0.5-mile buffer. The potential mountain plover habitat within the buffer is approximately ½ mile from the state section line, and approximately one mile from any proposed development.

Surface use is prohibited within ¼ mile of active mountain plover nest sites. There is no evidence that mountain plover actually exist in this area, it is only a potential habitat area. In addition, state development would be beyond the ½ mile no surface occupancy buffer. Impacts to mountain plover as a result of state mineral development would be minimal.

Cumulative: There would be no cumulative impacts to mountain plover as a result of state activities. The potential mountain plover habitat within the POD area lies within Section 20, which is a mix of federal and fee minerals, with private surface ownership. Details regarding cumulative impacts from fee and federal mineral development could be found in the Coal Creek POD Joint EA and the MT FEIS.

4.3.7.2.4 Greater Sage Grouse and Sharp Tailed Grouse

Direct and Indirect: The most common impacts to sage grouse and sharptailed grouse due to CBNG development are human disturbance and habitat alteration. Eight documented or recorded leks lie within the POD survey area. Of the eight, none lie within the state section. The nearest lek is a greater sage grouse lek of unknown status located approximately ¼ mile west of the state section and inactive sharp tailed grouse lek located approximately 1/2 mile from the state section line and 1 mile from the nearest proposed activity. The impact to grouse would be minimal as a result of state activities. The following mitigation measures would be enforced, if necessary, to minimize impacts to sharptail and sage grouse leks:

- A No Surface Occupancy (NSO) within ¼ mile of the known leks.
- A No Surface Occupancy (NSO) between March 1 and June 15 in grouse nesting habitat within 2 miles of a known lek.

Cumulative: Increased activity in the vicinity of sage grouse leks and sharp tailed grouse leks may effect this species through human disturbance and habitat alternation. Additional information regarding cumulative impacts to grouse could be found in the MT FEIS.

4.3.7.2.5 Big Game

Direct and Indirect: Mule deer may be impacted by habitat fragmentation, habitat disturbance, and human disturbance. Part of the state section lies

within a crucial mule deer winter range. The following mitigations would be implemented to minimize the impacts to mule deer:

- A No Surface Occupancy (NSO) between December 1 and March 31 within the crucial winter range.

Deer populations would likely only be effected for a short amount of time while well drilling and infrastructure construction are occurring. The loss of vegetation as a result of construction operations could also impact deer populations. As the production phase is implemented and restoration of the disturbed well pad sites is complete, deer would likely return to the area.

Cumulative: The decrease in area of crucial mule deer winter range due to the increased development in the area may occur in the future. However, disturbance by activity and construction activities is short term and deer populations would only be temporarily effected. It is anticipated that populations would return to the area in the production phase of this project.

4.3.8 Predicted Effects on Social and Economic Factors (Issue #8)

4.3.8.1 Alternative A: No Coal Bed Natural Gas Development (No Action)

Direct and Indirect**:** Under this alternative, additional development of state minerals would not occur. As a result, no additional economic contribution to the School Trust would occur above the current lease rentals, license payments, and royalties from the sixteen existing wells in this section. This would have a direct effect upon the TLMD's fiduciary obligation to generate revenue for the beneficiaries of the school trust fund. Development would continue around the state section allowing for drainage of state minerals. This would reduce or eliminate the potential for development of state minerals in the future.

Cumulative: There would still be an increase in state and local taxes due to coal bed natural gas development from federal and fee minerals. There would be little difference in employment opportunities between the two alternatives.

4.3.8.2 Alternative B: Coal Bed Natural Gas Development (Proposed Action)

Direct and Indirect: Under this alternative, additional state minerals would be developed. As a result, the state school trust would receive royalty revenue equivalent to 12.5% of the gross value of the additional produced natural gas from the state section in addition to the 12.5% that the state received for the existing 16 wells. Based upon performance of the other wells in the CX field and the state section along with the current gas price, this would generate over $3.75 million to the Common School Trust over the 10-15 year life of the project.

Cumulative: There would be an increase in the state and local taxes due to coal bed natural gas development of state, federal, and fee minerals. The increase in production would create a minimal increase in the number of the jobs relating to the activity.

CHAPTER 5:
AGENCY CONSULTATION AND PUBLIC COMMENT

The following agencies were consulted throughout the development of this Environmental Assessment:

- Fidelity Exploration and Production Company
- Montana Board of Oil and Gas Conservation
- Montana Department of Natural Resources and Conservation – Water Resources Division

Public comment was solicited via press release, website posting, and mail out to interested parties. One comment in support of the project was received.

Prepared by: Bobbi Jo Coughlin, Petroleum Engineer, Minerals Management Bureau

/s/

July 7, 2006

Coughlin, Bobbi Jo

From: JOHN & CONNIE MORRIS [cjm@fiberpipe.net]
Sent: Monday, July 03, 2006 10:48 PM
To: Coughlin, Bobbi Jo
Subject: Public Comment: Coal Creek Amended Coal Bed Natural Gas (CBNG) Project

Bobbi Jo Coughlin
Petroleum Engineer
Department of Natural Resources and Conservation (DNRC)
Trust Land Management Division
P.O. Box 201601
Helena, MT 59620-1601

July 3, 2006

Subject: Coal Creek Amended Coal Bed Natural Gas (CBNG)
project - additional wells.

Dear Ms. Coughlin:

I urge you and the DNRC to approve the amended Coal Creek Natural Gas field located within the existing CX Field for the following reasons:

1. It is reasonable and prudent management of natural resources.
2.The equipment and workforce is already there.
3.It is less invasive to the surface owner, wildlife and environment to "get in and get out", allowing for adaptation to the changes once it is completed.
4. It gives the landowner a time-table of projected activity in their areas, allowing for forseeable closure to development that will settle into the production phase.
5. It promotes safety as area residents are accustomed to the activities of development. We expect the traffic and additional impacts since we have been watching it occur.
6. It will enhance data collection on impacts of development to have the area fully completed, giving an opportunity to assemble "sufficient credible data" (SCD) required by some agencies in making decisions and policies.
7. It allows for planning by area communities and locals to address impacts to workforce, housing, essential services and other economic demands and benefits.

The completed EA supports these reasons for approval. In a nutshell, it is the common sense thing to do. Thank you.

Sincerely,
Connie J. Morris
HC 39 Box 30
Otter, MT 59062 406-784-2485
or
427 NB Ave.
Sheridan, WY 82801 307-672-8208

7/7/2006

CHAPTER 6:
REFERENCES

Horpestad, A. & Skaar, D. (2001). *Water Quality Impacts from Coal Bed Natural gas Development in the Powder River Basin, Wyoming and Montana*.

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Wagers, S.J. (2005). *Fidelity: An Addendum to the Coal Creek Development Area Cultural Resource Investigation in Section 16, T9S, R41E, Big Horn County, Montana.*

APPENDIX A

COAL BED NATURAL GAS FIELD OPERATING AND RECLAMATION REQUIREMENTS

*DNRC refers to DNRC Trust Land Management Division (TLMD)

A. Notifications

a. Notify the DNRC, Southern Land Office at least 48 hours prior to beginning any construction and/or drilling operations (406-247-4400).
b. Any variances from the following guidelines or the site specific stipulations must be approved by DNRC.
c. The lessee (lessee includes lessee, operator, contractors, or any other agent conducting activities on lease premises pursuant to authority conveyed by the state lessee) shall obtain approval prior to construction of any new surface disturbing activities that are not specifically addressed in the approved operating plan or POD Surface Use Plan.
d. Phased reclamation plans would be submitted to DNRC for approval prior to individual POD facility abandonment.
e. A notice of Intent to Abandon must be submitted for approval. Upon completion of plugging, a copy of the Subsequent Report of Abandonment must also be submitted.
f. If any cultural values (sites, artifacts, human remains) are observed that were not previously addressed, reviewed, and approved by DNRC, they would be left intact, operations stopped, and the DNRC notified immediately. The lessee is responsible for informing all persons in the area who are associated with this project that they would be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. DNRC would conduct an evaluation of the cultural values to establish appropriate mitigation, salvage, or treatment. If additional archaeological survey work is required, lessee would be responsible for this expense.

B. Construction

a. Vehicle Travel:
    i. Construction and other project related traffic would be restricted to approved routes. Cross country vehicle travel would not be allowed.
    ii. Maximum speed on all lessee constructed and maintained roads would not exceed 25 miles per hour.
    iii. The lessee shall restrict travel on unimproved two-track roads during periods of inclement weather or spring thaw when the possibility exists for excessive surface resource damage (e.g. rutting in excess of 4 inches, travel outside two-track roadway, etc). This applies to pre-approval APD-POD planning (surveying, staking), drilling, production, and reclamation operations.
b. Construction activities could only occur pursuant upon DNRC written approval of the operating plan.

c. All construction activities for off wellpad facilities would be addressed in an operation plan submitted by Fidelity Exploration and Production Company.
d. Soil:
    i. Stockpiled topsoil and pit material must be stored to prevent material from entering drainages.
    ii. Equipment couldnot be stored on the topsoil stockpile.
    iii. The lessee would limit vegetation removal and the degree of surface disturbance, utilizing all practicable measures to minimize erosion and stabilize disturbed soils.
    iv. Topsoil would be salvaged for use in reclamation on all areas of surface disturbance (roads, locations, pipelines, etc). Clearly segregate topsoil from excess spoil material.
    v. The lessee would not push soil material and overburden over side slopes or into drainages. All soil material disturbed would be placed in an area where it could be retrieved without creating additional undue surface disturbance and where it does not impeded watershed and drainage flows.
    vi. Construct the backslope no steeper than ½:1, and construct the foreslope no steeper than 2:1 unless otherwise directed by DNRC.
    vii. Maintain a minimum 20 foot undisturbed vegetative border between toe of fill pad and/or pit areas and the edge of adjacent drainages, unless otherwise directed by DNRC.
e. Drilling, casing, and cementing operations shall be designed and conducted as requested by MBOGC.
f. Construction and drilling activity would not be conducted using frozen or saturated material during periods when watershed damage or excessive rutting is likely to occur.
g. With the overall objective of minimizing surface disturbance and retaining land stability and productivity, the lessee shall use equipment that is appropriate to the scope and scale of work being done for roads and well pads (use equipment no larger than needed for the job).
h. To minimize electrocution potential to birds of prey, all overhead electrical power lines would be constructed to standards identified by the Avian Power Line Interaction Committee (1996).
i. The lessee shall use wheel trenches or ditch witches to construct all pipeline trenches, except where extreme topography or other environmental factors preclude their use.
j. Reserve pits:
    i. Reserve pits would be adequately fenced during and after drilling operations until pit is reclaimed so as to effectively keep out wildlife and livestock. Adequate fencing is defined as follows:
        1. Construction materials would consist of steel or wood posts. Three or four strand wire (smooth or barbed) fence or hog panel (16 foot length by 50 inch height) or plastic snow fence must be used with connectors such as fence staples, quick-connect clips, hog rings, hose clamps, twisted wire, etc.

2. Construction standards: Posts shall be firmly set in ground. If wire is used it must be taut and evenly spaced, from ground level to top wire, to effectively keep out animals. Hog panels must be tied and sturdy. Fence must be at least 2 feet from edge of pit. Three sides must be fenced prior to commencing drilling, and the fourth side of the fence immediately upon completion of drilling, prior to rig release. Fence must be left up and maintained in adequate condition until pit is closed.

ii. The reserve pit would be oriented to prevent collection of surface runoff. After the drilling rig is moved, the lessee may need to construct a trench on the uphill side of the reserve pit to divert surface drainage around it. If constructed, the trench would be left intact until the pit is closed.

iii. The reserve pit would be lined with an impermeable liner if required by the DNRC or MBOGC. An impermeable liner is any liner having a permeability less than 10-7 cm/sec. The liner would be installed so that it would not leak and would be chemically compatible with all substances that may be put in the pit. Liners made of any man-made synthetic material would be of sufficient strength and thickness to withstand normal installation and pit use. In gravelly or rocky soils, a suitable bedding material such as sand would be used prior to installing the liner.

iv. The reserve pit would be constructed so that at least half of its total volume is in solid cut material (below natural ground level).

v. The only fluids/waste materials which are authorized to go into the reserve pit are RCRA exempt exploration and production wastes:
   1. Drilling muds and cutting
   2. Rigwash
   3. Excess cement and certain completion and stimulation fluids defined by EPA as exempt

vi. It may not include drilling rig waste, such as:
   1. Hydraulic fluids
   2. Engine oil
   3. Oil filters
   4. Cement, drilling mud, or other product sacks
   5. Paint, pipe dope, chemical, or other product container.
   6. Chemicals and chemical rinsate.

vii. Any evidence of non-exempt wastes being put into the reserve pit may result in the DNRC requiring specific testing and closure requirements.

k. <u>Culverts</u>:

i. Culverts would be placed on channel bottoms on firm, uniform beds, which have been shaped to accept them, and aligned parallel to the channel to minimize erosion. Backfill would be thoroughly compacted.

ii. All culverts would be appropriately sized.

l. <u>Pipelines</u>:

i. Pipeline construction shall not block nor change the natural course of any drainage. Pipelines shall cross perpendicular to drainages. Pipelines shall

not be run parallel in drainage bottoms. Suspended pipelines shall provide adequate clearance for maximum runoff.

ii. Pipeline trenches shall be compacted during backfilling. Pipeline trenches shall be routinely inspected and maintained to ensure proper settling, stabilization, and reclamation.

m. During construction, emissions of particulate matter from well pad and road construction would be minimized by application of water or other non-saline dust suppressants with at least 50 percent control efficiency. Dust inhibitors (surfacing materials, non-saline dust supressants, and water) would be used as necessary on unpaved roads that present a fugitive dust problem. The use of chemical dust suppressants on state surface would require prior approval from DNRC.

n. Lessees are required to obtain a National Pollution Discharge Elimination System (NPDES) Storm Water Permit from MDEQ as required prior to any suface disturbing activities.

o. If in the process of air drilling the wells there is a need to use mud, all circulating fluids would be contained either in an approved pit or in an aboveground containment tank. The pit or containment tank would be large enough to safely contain the capacity of all expected fluids without danger to overflow. Fluid and cuttings would not be squeezed out of the pit, and the pit would be reclaimed in an expedient manner.

p. Production facilities (including dikes) must be placed on the cut portion of the location and a minimum of 15 feet from the toe of the back cut unless otherwise approved by DNRC.

q. A complete copy of the Application for Permit to Drill (APD), including conditions, stipulations, and the H2S contingency plan (if required) shall be available for reference at the well site during the construction and drilling phases.

r. This drilling permit is valid for either one year from the approval date or until lease expiration, whichever comes first.

C. Operations/Maintenance

a. Waste Disposal:

i. Trash or other debris must not be disposed of on the pad.

ii. Burning of materials or oil is not allowed.

iii. All waste, other than human waste and drilling fluids, would be contained in a portable trash cage. This waste would be transported to a State approved waste disposal site immediately upon completion of drilling operations. No trash or empty barrels would be placed in the reserve pit or buried on location. All state and local laws and regulations pertaining to disposal of human and solid waste would be complied with.

iv. Sewage shall be placed in a self-contained, chemically treated porta-potty on location.

v. The lessee and their contractors shall ensure that all use, production, storage, transport, and disposal of hazardous materials associated with the drilling, completion, and production of these wells would be in accordance with all applicable existing and hereafter promulgated federal, state, and local government rules, regulations, and guidelines. All project related

activities involving hazardous materials would be conducted in a manner to minimize potential environmental impacts. In accordance with OSHA requirements, a file would be maintained onsite containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds, and/or substances which are used in the course of construction, drilling, completeion, or production operations.

b. The lessee shall complete CBNG wells (case, cement, and under ream), or abandon as soon as possible, but no later than 30 days after drilling operations, unless an extension is given by DNRC.
c. Confine all equipment and vehicles to the access road(s), pad(s), and area(s) specified in the approved APD or POD.
d. Rat and mouse holes shall be filled and compacted from the bottom to the top immediately upon release of the drilling rig from the location.
e. Noxious Weeds:
    i. The lessee would be responsible for prevention and control of noxious weeds and weeds of concern on all areas of surface disturbance associated with this project (well locations, roads, water management facilities, etc.) Use of pesticides shall comply with the applicable State laws. Pesticides shall be used only in accordance with their registered uses and within limitations. Lessee shall monitor disturbed areas for the presence of noxious weeds from June through September throughout the life of the field.
    ii. Control efforts must be done as necessary and as specified by DNRC once noxious weeds are identified with the intent of erradicating and preventing seed production.
f. All permanent above-ground structures (e.g. production equipment, tanks, etc.) not subject to safety requirements would be painted to blend with the natural color of the landscape. The paint used would be a color acceptable to DNRC.
g. Lessees are advised that prior to installation of any oil and gas well production equipment which has the potential to emit air contaminants, the owner or lessee of the equipment must notify the Montana Department of Environmental Quality (MDEQ) to determine permit requirements. Examples of pertinent well production equipment include fuel-fired equipment (e.g. diesal generators), separators, storage tanks, engines, and dehydrators.
h. Fire Safety:
    i. During the fire season (June-October), the lessee shall institute all necessary precautions to ensure that fire hazard is minimized, including, but not limited to, mowing vegetation on the access route(s) and well location(s), keeping fire fighting equipment readily available when drilling, etc. DNRC may also require additional measures for fire prevention.
    ii. If a fire is started by lessee activities, the lessee may be liable for suppression costs by 50-63-103, MCA.
i. Erosion:
    i. Upgrade and maintain access roads and drainage control (e.g. culverts, drainage dips, ditching, crowning, surfacing, etc.) as necessary and as

directed by DNRC to prevent soil erosion and accommodate safe, environmentally sound access.

ii. DNRC may direct additional control measures for roads, pipelines, drainages, or other surface disturbances as needed.

j. Any spilled or leaked oil, produced water, or treatment chemicals must be reported in accordance with MBOGC requirements and immediately cleaned up in accordance with DNRC requirements. This includes cleanup and proper disposition of soils contaminated as a result of such spills/leaks.

k. Changes in operational and/or environmental conditions may require additional or modified requirements.

l. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 4 inches deep, the soil shall be deemed too wet to adequately support construction equipment.

m. All water discharge must comply with State law and must have permit prior to commencing.

n. Landscape those areas not required for production to the surrounding topography as soon as possible. The fluids and mud must be dry in the reserve pit before recontouring pit area. The lessee would be responsible for recontouring and reseeding of any subsidence areas that develop from closing a pit.

D. Dry Hole/Reclamation

a. When individual facilities such as well locations, pipelines, discharge points, impoundments, etc. are no longer needed, they need to be addressed in a reclamation plan and approved by the DNRC. Individual items that would need to be addressed in reclamation plans include, but are not limited to:

i. Configuration of reshaped topography, drainage systems, and other surface manipulations.

ii. Waste disposal

iii. Revegetation methods, including specific seed mix (pounds pure live seed/acre) and soil treatments (seedbed preparation, fertilization, mulching, etc.).

iv. Other practices that would be used to reclaim and stabilize all disturbed areas, such as water bars, erosion fabric, hydro-mulching, etc.

v. An estimate of the timetables for beginning and completing various reclamation operations relative to weather and local land uses.

vi. Methods and measures that would be used to control noxious weeds, addressing both ingress and egress to the individual well or POD.

vii. Decommissioning/removal of all surface facilities.

viii. Closure, reclamation, or approved transfer of areas utilized for produced CBNG water, including discharge points, reservoirs, off-channel pits, land application areas, livestock/wildlife watering facilities, surface discharge stream channels, etc.

b. For abandonment, surfacing material and culverts must be removed unless requested to remain in place by DNRC. The roads and ditches must be recontoured and seeded in accordance with DNRC requirements.

c. Pit reclamation:
    1. All pit(s) must be emptied of all fluids within 90 days after completion of drilling operations. The pit must be closed properly to assure protection of soil, water, and vegetation.
    2. Squeezing of pit fluids and cuttings is prohibited. Pits must be dry of fluids or they must be removed via vac truck or other environmentally acceptable method and disposed of in a State approved location prior to backfilling, recontouring, and replacement of topsoil.
    3. The pit may not be cut or trenched.
    4. Pit mud/sludge material may be buried onsite after the material has dried.
    5. The pit material must be covered with a minimum of 1 ½' of soil.
    6. The lessee would be responsible for recontouring any subsidence areas that develop from closing a pit.
    7. The plastic pit liner (if any) may be folded in with prior BOGC approval.
d. The reclamation effort would be evaluated as a success if the previously disturbed area is stabilized, all potential water erosion is effectively controlled and the vegetative stand is established with at least 70% cover.
e. All disturbed lands associated with this project, including the pipelines, access roads, water management facilities, etc. would be expediently reclaimed and reseeded in accordance with the surface use plan and any pertinent site-specific reclamation.
f. Disturbed lands would be recontoured back to conform with existing undisturbed topography. No depressions would be left that trap water or form ponds.
g. Before the location has been reshaped and prior to redistributing the topsoil, the lessee would rip or scarify the drilling platform and access road on the contour, to a depth of at least 12 inches. The rippers are to be no further than 24 inches apart.
h. Topsoil shall be evenly distributed.. Prepare the seedbed by disking to a depth of 4 to 6 inches following the contour.
i. Waterbars are to be constructed at least one foot deep, on the contour with approximately two feet of drop per 100 feet of waterbar to ensure drainage, and extended into established vegetation. All waterbars are to be constructed with their berm on the downhill side to prevent the soft material from silting in the trench. The initial waterbar should be constructed at the top of the backslope. Subsequent waterbars should follow the following general spacing guidelines:

Slope (Percent)	Spacing Interval (Ft)
<2	200
2-4	100
4-5	75
>5	50

j. The lessee would drill seed on the contour to a depth of 0.5 inch, followed by cultivation to compact the seedbed, preventing soil and seed losses.

i. Slopes too steep for machinery may be hand broadcast and raked with twice the specified amount of seed. To be effective, complete spring seeding after the frost has left the ground and prior to May 15. Fall or dormant seedings must be completed according to NRCS timing recommendations.

k. A Final Abandonment Notice must be submitted prior to a final abandonment evaluation by DNRC.

l. Soil fertility testing and the addition of soil amendments may be required to stabilize some disturbed lands.

m. Reduce the backslope to 2:1 and the foreslope to 3:1 unless otherwise directed by DNRC. Reduce slopes by pulling fill material up from foreslope into the top of cut slopes

n. The lessee shall seed all disturbed areas, using an agreed upon method suitable for the location. Seeding shall be repeated if a satisfactory stand is not obtained as determined by DNRC upon evaluation after the following growing season. The lessee shall seed all disturbed areas with the seed mixture(s) listed below unless otherwise approved by DNRC area office. The seed mixture(s) shall be planted in the amounts specified in pounds of pure live seed (PLS)/acre. There shall be no primary or secondary noxious weed seed in the seed mixture. Seed shall be tested and the viability testing of seed shall be done in accordance with State law(s) and within six months prior to purchase. The seed mixture container shall be tagged in accordance with State law(s) and available for inspection by DNRC.

o. Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area. Smaller/heavier seeds have a tendency to drop to the bottom of the drill and are planted first. The lessee shall take appropriate measures to ensure this doesn't occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre noted below are to be doubled. The seeding would be repeated until a satisfactory stand is established as determined by DNRC. Evaluation of growth would not be made before completion of the second growing season after seeding. DNRC is to be notified a minimum of seven days prior to seeding of the project.

    i. **<u>Seed Mixture</u>** (silty, clayey, or silt clay loams)

        a) The combination must include at least four of the following species. Western wheatgrass must be included in the mix. Thickspike wheatgrass may be substituted for wheatgrass only when western wheatgrass in unavailable. Species and variety substitution may be approved by the DNRC Area Office.

Species of Seed	Variety	Common Name	Pound/acre PLS)*
Pascopyrum smithii	Rosanna	Western Wheatgrass	3.00
Pseudoroegneria spicata	Goldar	Bluebunch wheatgrass	2.00
Stipa viridula	Lodom	Green needlegrass	2.00
Elymus trachycaulus	Pryor	Slender wheatgrass	2.00
Stipa comata		Needle and thread	1.00
Bouteloua curtipendula		Sideoats Grama	2.00
Schizachyrium scoparium		Little bluestem	2.00

p. ** Pure live seed (PLS) formula: % of purity of seed mixture times % germination of seed mixture = portion of seed mixture that is PLS.*